

***Descurainia torulosa* Rollins (Wind River tansymustard): Species Conservation Assessment Update**

Title of Assessment: *Descurainia torulosa* Rollins (Wind River tansymustard): A Technical Conservation Assessment, USDA Forest Service, Rocky Mountain Region

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Update Authors: Bonnie Heidel and Joy Handley

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Update Summary: Three new occurrences of *Descurainia torulosa* have been reported since the assessment was prepared, along with additional distribution information for some of the ~9 occurrences that were previously known. The newly discovered occurrences do not expand the known range of the species, but fill gaps in distribution. One among them is the only large population known on Shoshone National Forest, and the only known population of the species that is an extensive population complex. New evidence of threats on a BLM/private occurrence and lack of threats at some of the Forest Service occurrences are cited. New photographs of the species and its habitat are available, and are presented in this addendum.

Distribution: New Information Available

Taxonomic Status: NA

Agency Status: NA

Other: NA

Significance of Changes Relative to Original Assessment: The new information presented in this addendum represents an addition to the number of known occurrences of *Descurainia torulosa*. The description of the range of the species presented in the assessment is unchanged because the new occurrences are within the known range of the species. The evaluation of threats presented in the assessment is still relevant and supported by this addendum. The new information indicates that a revision of the published assessment is not needed at this time.

The newly available population and habitat information adds detail but does not signify change. The new occurrences and other information are under review as to whether they warrant a change in global and state ranks, in light of new occurrences and new threats, but they do not necessarily affect agency status.

Positive Findings of New or Updated Information and Their Sources

(Note: The Table A checklist attached to this update provides a summary of all sources consulted)

Sources 1, 2 and 3:

Taylor, A., K. Taylor, B. Heidel and J. Handley. 2005. North Fork sensitive plant surveys on Shoshone National Forest. Prepared for Shoshone National Forest, Cody, WY. Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.

Taylor, A., K. Taylor, B. Heidel and J. Handley. 2006. Wood River and North Fork sensitive plant surveys on Shoshone National Forest. Prepared for Shoshone National Forest, Cody, WY. Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.

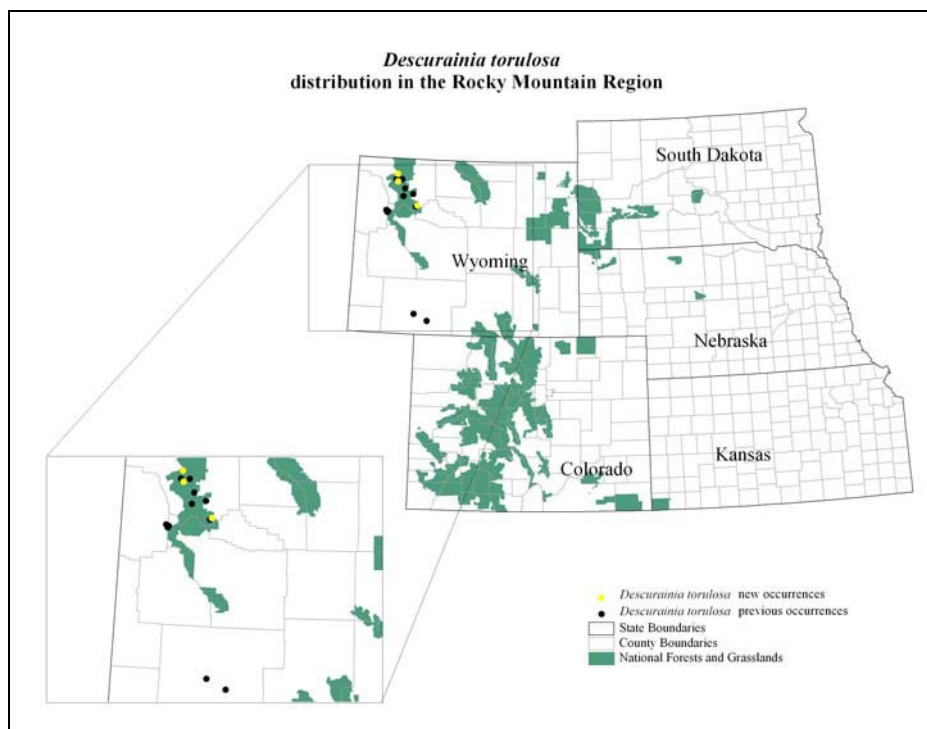
Evert, Erwin F. 2004. Botanist/Consultant from Park Ridge, IL and Wapiti, WY. Provided data from personal herbarium (EVERT) upon consultation with Bonnie Heidel, WYNDD.

Summary of New Information

The two reports by Taylor et al. (2005, 2006) and the associated consultation with Erwin Evert that took place in 2004 and 2005 document three new occurrences and expand of prior occurrences of *Descurainia torulosa*. They do not expand the known range of the species, but fill gaps in distribution. (Note: The detailed field forms and collection labels that were produced are not part of the report but integrated in the Wyoming Natural Diversity Database records and the Rocky Mountain Herbarium database; cited separately.)

One of the three new occurrences is magnitudes more extensive than all other known occurrences, is the only large population in the Rocky Mountain Region as one of only three occurrences known for the species with population numbers in the 100's magnitude. The survey results further indicate that prescribed burn and mechanical treatment project plans on the Shoshone National Forest are not likely to affect *Descurainia torulosa* habitat that lies within the proposed management unit boundaries except as its habitat extends directly to forest borders, and as proposed treatments may have secondary effects (erosion, weeds). These projects also entailed consultation with a local authority (Erwin Evert) to ensure that all collections he made in the study areas are entered. The field surveys resulted in new collections (deposited at RM) and new photographs of the species and its habitat (below). This project resulted in changes to the distribution map (next page).

Updated distribution map for *Descurainia torulosa*.





Descurainia torulosa habitat. Photograph by Amy Taylor, July 20, 2005



Descurainia torulosa. Photograph by Amy Taylor, July 6, 2005



Descurainia torulosa habitat. Photograph by Amy Taylor, July 5, 2005



Descurainia torulosa. Photograph by Amy Taylor, July 1, 2004



Descurainia torulosa fruit. Photograph by Amy Taylor, July 1, 2004

Relevant Sections of the Conservation Assessment Affected by the Updates

Add information to Table 1 and Table 2, and replace the distribution map in the section on Management status and natural history and on Distribution and abundance.

Add text in the section on Conservation – Threats

Consider whether to add photos to the section on Management status and natural history sections on Classification and description and on Habitat. Some of the available photos are reprinted on the following pages. They are also available as jpgs.

Source 4

Wyoming Natural Diversity Database. March 2006. Element occurrence records for *Descurainia torulosa*. Laramie, Wyoming.

Summary of New Information

The new and updated occurrences data synthesized field results, including distribution details, abundance information, and habitat details (Wyoming Natural Diversity Database 2006). It represents a synthesis of the salient information recorded on sensitive species survey forms for each locale.

Relevant Sections of the Conservation Assessment Affected by the Updates

Add text to Table 2 and to the text in the section on Management status and natural history – in subsections on Distribution and abundance and on Habitat

Source 5

Rocky Mountain Herbarium. April 2006. Specimen vouchers and collection labels for *Descurainia torulosa*. University of Wyoming, Laramie, Wyoming.

Summary of New Information

No specimens have been added to the *Descurainia torulosa* folders, but the vouchers from the 2004-2005 studies have been submitted and will be added to accessions. The collection label data for these vouchers has been incorporated in occurrence records maintained by the Wyoming Natural Diversity Database.

Relevant Sections of the Conservation Assessment Affected by the Updates

Add text to Table 2 and to the text in the section on Management status and natural history – in subsections on Distribution and abundance and on Habitat

Source 6

Glennon, Jim. 2006. Bureau of Land Management Botanist, Rock Springs Field Office. Personal communication with Bonnie Heidel.

Summary of New Information

Staff in his office have been contacted by a consultant doing environmental assessment work apparently not overseen by BLM, but seeking information on BLM sensitive species for an energy development project in the area of the Pine Butte population of *Descurainia torulosa*. Glennon suggested contacting the consulting firm or searching state and federal environmental assessments later this year. Note: A major part of occupied habitat in the Pine Butte area is on private land.

Additional information Additional Unabstracted Sources – *pre*-Assessment

(citations pre-dating Assessment publication that were not referenced in it).

None.

Additional Unabstracted Sources – *post*-Assessment

(citations post-dating Assessment publication that refer to the target genus but were determined by the reviewer to contain no information requiring an update of the original assessment)

We considered but did not abstract one document that presented information from other data sources on the rare species of southwestern Wyoming, including *Descurainia torulosa*.

Wisdom, M.J., M.M. Rowland, L.H. Suring, L. Schueck, C. Wolff Meinke, B.C. Wales and S.T. Knick. 2003. Procedures for regional assessment of habitats for species of conservation concern in the sagebrush ecosystem. March 2003 Report, Version 1, Pacific Northwest Research Station, 1401 Gekeler Lane, La Grande, OR 97850.

We considered but did not abstract seedbank listings for *Descurainia torulosa*.

Denver Botanical Garden. 2006. Seedbank listings. Available on the web at: <http://www.centerforplantconservation.org/> and at <http://denverbotanicgardens.org/pageinpage/conservationprojects.cfm>

We considered but did not abstract one document that presented information from other data sources on the rare species of the Red Desert and Jack Morrow Hills, including *Descurainia torulosa*.

Western EcoSystems Technology, Inc. 2006. Resources of the Red Desert and the Jack Morrow Hills. prepared for Center for the Wild West, 3735 Mountain Laurel Place Boulder, CO. Available on the web at: http://www.reddesert.org/documents/west_report.pdf

We considered but did not abstract one environmental assessment for a proposed pipeline project in Sweetwater County outside the species' known range, prepared for the Bureau of Land Management, in which *Descurainia torulosa* was named as a species of interest:

Read, M. BLM-RFO Wildlife Biologist and DFPA Review Team. year unknown. Wildlife monitoring/protection plan for the Desolation Flats natural gas development project. Appendix E. prepared for Bureau of Land Management, Rawlins, Wyoming. Available on the web at: <http://scholar.google.com/scholar?hl=en&lr=&q=cache:-8q8tDfOTF8J:www.wy.blm.gov/nepa/rfodocs/desflats/rod/app-e.pdf+%22Descurainia+torulosa%22>

We considered but did not abstract one environmental assessment for a proposed fire plan that potentially applies to the BLM population in Park County, prepared for the Bureau of Land Management, in which *Descurainia torulosa* was named as a species of interest:

Greystone Environmental Consultants, Inc. Anchor Point Group, LLC Boulder, Colorado. 2004. Shoshone River area fire plan. prepared for the Bureau of Land Management, Cody Field Office Cody, Wyoming, Available on the web at: <http://www.wy.blm.gov/fire/cyfo/finalreport.pdf>

We considered but did not abstract one environmental assessment for a proposed range allotment plan outside the known range of *Descurainia torulosa* in which it was named as a species of interest:

US Forest Service. 2003. Draft Environmental Impact Statement for the Wyoming range allotment complex. Forest Service Sensitive Plant Species List. Available on the web at: <http://www.fs.fed.us/btnf/projects/2003/Draft%20Taliaferro%20EIS%2010.10.2003%20Version%202.pdf>

We considered but did not abstract one environmental assessment for a proposed pipeline project in Natrona County outside the species' known range, prepared for the Bureau of Land Management, in which *Descurainia torulosa* was named as a species of interest:

Anderson Environmental Consulting Casper, Wyoming and TRC Mariah Associates Inc. Laramie, Wyoming MAI Project 42556. 2005. Environmental Assessment for the Cave Gulch Infill Development Project. Prepared for Bureau of Land Management, Casper Field Office, in which *Descurainia torulosa* was named as a species of interest. Available on the web at: <http://scholar.google.com/scholar?hl=en&lr=&q=cache:JX4u7-UyEfYJ:www.wy.blm.gov/nepa/cfodocs/cavegulch/ea-screen.pdf+%22www.wy.blm.gov/nepa/cfodocs/cavegulch/ea-screen.pdf%22>

We considered but did not abstract literature on other members of the genus that did not have clear relevance.

Li, W., X. Liu, M.A. Khan, Y. Kamiya, and Y. Shinjiro. 2005. Hormonal and environmental regulation of seed germination in flaxweed (*Descurainia sophia*). Plant Growth Regulation 45(3): 199-207.

Andrianova, T.V. and D.W. Minter. 2004. *Septoria sisymbrii*. IMI Descriptions of Fungi and Bacteria 159: 1581-1590.

Baskin, C.C., P. Milberg, L. Andersson, and J.M. Baskin. 2004. Germination ecology of seeds of the annual weeds *Capsella bursa-pastoris* and *Descurainia sophia* originating from high northern latitudes. Weed Research 44(1):60-68.

DeFalco, L.A., D.A. Bryla, V. Smith-Longozo, and R.S. Nowak. 2003. Are Mojave Desert annual species equal? Resource acquisition and allocation for the invasive grass *Bromus madritensis* subsp. *rubens* (Poaceae) and two native species. American Journal of Botany 90(7):1045-1053.

Checklist of Sources Consulted for Updates to the *Descurainia torulosa* Conservation Assessment

Guidelines for Producing Updates

Sources of information relevant to review of this Technical Conservation Assessment for updates include databases, experts, personal communications, published and unpublished literature. Positive results are discussed in detail in the Summary of Addendum to the Technical Conservation Assessment.

Internet Literature Searches: The minimal search for each update consists of Google Scholar, Federal Register, plus a minimum of three other available online literature databases. Search terms include at a minimum: species common name, genus, and recent synonyms. Other keywords will be used at the discretion of the updater (e.g., passerine, wetland, rodent). Searches will be constrained to the time beginning two years prior to publication of the Technical Conservation Assessment to the present.

Table A. Sources of information consulted for updates to the Species Conservation Assessment.

Source Category	Source/ Name	Date	Results
Internet based literature databases	Google	2/23/2006 4/6/2006	Two new sources for search term “ <i>Descurainia torulosa</i> ” and “Wind River tansymustard”. Cited but not reviewed.
	Google Scholar	2/23/2006 4/6/2006	Five new sources for search term “ <i>Descurainia torulosa</i> ”. Cited but not reviewed.
	Federal Register	4/6/2006	No new sources
	Biological Abstracts	2/23/2006	Five new sources identified for search term “ <i>Descurainia torulosa</i> ” and “tansymustard” on other species in the genus. None were specific to <i>D. torulosa</i> . Cited but not reviewed.
	Scopus	4/6/2006	No new sources
	Web of Science	4/6/2006	No mention
	WorldCat	4/6/2006	No mention
Reports	Taylor, A., K. Taylor, B. Heidel and J. Handley. 2005, 2006.	4/14/06	New records representing 2004, 2005 field results. See References 1 and 2
Primary experts	Erwin Evert, Botanist/Consultant	2004	One new record from personal herbarium representing a collection in 1974. See Reference 3.
	Kevin and Amy Taylor, WYNDD consultants	2/10/06	Two new records from fieldwork in 2005-06. See References 1, 2, and 4
NatureServe affiliate program databases and personnel	Wyoming Natural Diversity Database	4/14/06	Three new records representing 2004, 2005 field results. See Reference 4.
Federal Agency Personnel	Kent Houston, Shoshone NF	4/14/06	No new sources
	Jim Glennon, Rock Springs Field Office	4/14/06	One environmental assessment pending; for later research. See Reference 6.
Museums and Herbaria	Rocky Mountain Herbarium	4/6/2006	New records representing 2004, 2005 field results. See Reference 5.
Announcement from R2 to all FS personnel (including species list)			

Source Category	Source/ Name	Date	Results
Internal USFS Intranet search			
Original Author	WYNDD authors		
State Agencies (e.g., WY Game and Fish, CDOW)	None		

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